DOCUMENT RESUME

ED 444 685 PS 028 552

AUTHOR	Hirasing, R. A.; van Zaal, M. A. E.; Meulmeester, J. F.; Verbrugge, H. P.
TITLE	Child Health in the Netherlands: Facts and Figures, 1997.
ISBN	ISBN-90-6743-492-2
PUB DATE	1997-00-00
NOTE	84p.; "The production of this publication was supported by a grant from the Ministry of Health, Welfare and Sport (Department of Health Policy) and the Foundation Parent and Child Care."
AVAILABLE FROM	TNO Prevention and Health, Division Public Health and Prevention, P.O. Box 2215, 2301 CE Leiden, Netherlands; Tel: 31-71-518-18-18; Fax: 31-71-518-19-20
PUB TYPE	Books (010) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*At Risk Persons; *Child Health; Child Welfare; *Children; Compulsory Education; *Demography; Diseases; Elementary Secondary Education; Foreign Countries; Health Promotion; Health Services; *Life Style; Mental Health; Mortality Rate; Preschool Education; Special Education
IDENTIFIERS	Access to Services; Child Mortality; *Health Status; *Netherlands; Playgroups; School Based Health Clinics

ABSTRACT

This book presents information on the current health status of children and adolescents in the Netherlands. Chapter 1 discusses demographic factors, including population trends and life expectancy. Chapter 2 focuses on children's health status, reporting on child mortality rates, abortion, birth rate, family planning, perinatal health problems, congenital anomalies, accidents at or around the home, traffic accidents, chronic conditions and handicaps, asthma, diabetes mellitus, vision, hearing, developmental problems, mental deficiency, and mental health. Chapter 3 presents information on lifestyle influences on children's health, including breastfeeding, dental health, leisure time, cigarette smoking, alcohol, drugs, and teenage sexuality. Chapter 4 discusses aspects of the Netherlands' health care system, including access to health care, organization, financing, obstetrical care, maternity home help, preventive child health care, preschool and school health care, vaccinations, general practitioner consultation rates, specialist service use, and hospital admissions. Chapter 5 focuses on social welfare and discusses pregnancy leave, breastfeeding at work, parental leave, child benefit, day care for children, youth welfare work, and youth care. Chapter 6 discusses education, focusing on play groups, compulsory education, and schools for special education. Chapter 7 presents information on children at risk, including preterm children, ethnic minorities, children of refugees, adopted children, child abuse, and school dropouts. The report concludes by noting that children in the Netherlands enjoy a better state of health than their predecessors a generation ago. However, more attention needs to be paid to problems associated with smoking, drinking, and drug abuse, living environment, accident prevention, lack of exercise/sport, and mistaken nutritional habits. (Contains 39 references.) (KB)

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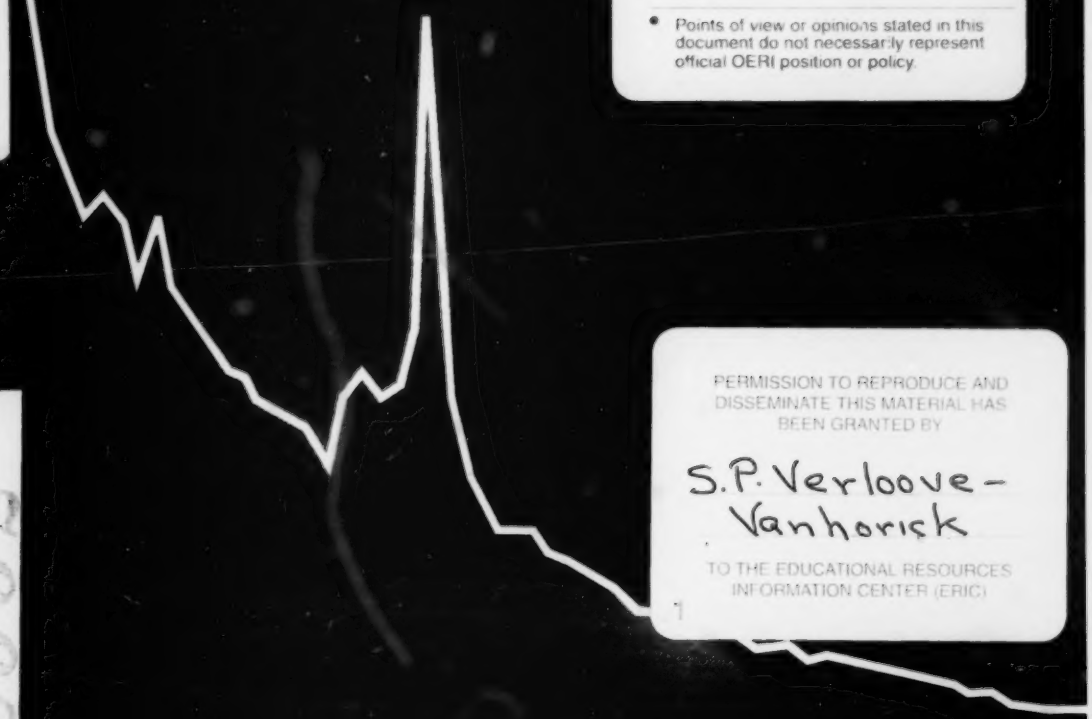

R.A. Hirasing
M.A.E. van Zaal
J.F. Meulmeester
H.P. Verbrugge

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CHILD HEALTH IN THE NETHERLANDS

FACTS AND FIGURES

1997

R.A. Hirasing

M.A.E. van Zaal

J.F. Meulmeester

H.P. Verbrugge

TNO Prevention and Health
Division Public Health and Prevention
P.O. Box 2215
2301 CE Leiden
The Netherlands
telephone +31 71 518 18 18
telefax +31 71 518 19 20

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Hirasing Remy A.
Child Health in the Netherlands, Facts and figures.
Authors: Remy A. Hirasing, M.A.E. Zaal, J.F. Meulmeester, H.P. Verbrugge.
TNO Prevention and Health, Division Public Health and Prevention, 1997. - With references.
ISBN: 90-6743-492-2

Printed 1997 Rean
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Front page and lay-out: Jokhan René BNO, Mantgum, The Netherlands.

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Preface

On the occasion of the international congress of the European Union for School and University Health and Medicine (EUSUHM)in 1963 in Rome, the Dutch Institute of Preventive Medicine published the booklet The School Child in the Netherlands, a medical approach in the context of public health and education. A second publication of this kind was published by the Ministry of Welfare, Health and Culture in 1981, the year the EUSUHM Congress was organised in Amsterdam. This booklet, entitled Youth Health Care in the Netherlands emphasized the longitudinal approach in care for children: pre- and perinatal care, Maternal and Child Health care (0-4 years) and school health care (4-19 years), an overview of the typical Dutch way of organising the preventive health care for children.

I appreciate the initiative of the Child Health Department of the TNO Division Public Health and Prevention in preparing an update of child health data on the occasion of the EUSUHM Congress in Leuven (Belgium). This congress is organised by the Dutch and Flemish Association of Youth Health. This publication, produced with financial support from the Dutch Ministry of Health, Welfare and Sport, is based on data from Statistics Netherlands, the Child Health Monitoring project (an annual health status project of TNO) and special studies. The first conclusion from these data is that children now enjoy a better state of health than their predecessors a generation ago. It will also be clear that more attention needs to be paid to problems associated with smoking, drinking and drug abuse, living environment, accident prevention, lack of exercise/sport and mistaken nutritional habits. New developments in recent decades in medical genetics, artificial reproduction (IVF, etc) and recent advances in neonatology make it necessary to monitor the health consequences in later stages of life carefully.

A recent nationwide evaluation of the Youth Health Care system showed that preventive health care cannot be exposed to the effect of a free market system. Standards of examination methods (protocols), as well as uniform data information and transfer, have to be developed into one coherent national system. This system, based on a national policy and carried out in mutual cooperation on regional and national level, will improve the efficacy of our youth health care services.

It is to be hoped that the EUSUHM congress will bring some new scientifically based arguments to realise our wishes for improvement.
Since various countries have published booklets similar to this Dutch one, a sensible suggestion may be that the European Union should coordinate these activities. Some standardisation would enable the international comparison of the state of health of our children.

J. Verhoeff
Inspector General for Health Care.

CHAPTER 1: DEMOGRAPHY

Density of population

The Netherlands is a kingdom in Europe, where the deltas of the Rhine and the Meuse are located. It is bounded by the North Sea, by Germany and Belgium. A quarter of the country (where about 60% of the population lives) is below sea level. On January 1 1996, the 41,500 km2 of the Netherlands housed 15.5 million inhabitants, an average of 457 inhabitants per km2 (Figure 1), making it one of the most densely populated countries in the world.

The Netherlands is a wealthy country. In 1993, the gross national product (GNP) per capita was 20,950 US dollars. Worldwide, there are eleven countries with a higher GNP per capita.

In 1995, 8.8% of Dutch GNP was spent on health care. European countries spend between 6.5% (Denmark) and 9.9% (France) of GNP on health care. In the United States, this figure was 14.5% in 1995.

Population trends

The population of the Netherlands increased by 50% in the last fifty years (Table 1). During that period, the numbers of young people remained stable, leading to a decrease in the proportion of children in the population. In 1950, the proportion of young people (aged 0-19 years) accounted for 37.6% of the population in the Netherlands. On 01-01-1996, this percentage was 24.4. This 'ageing' of the population will continue. The expectation is that, in the year 2020, 0-19 year-olds will account for 22% of the Dutch population.

Figure 1: Population density by province per km^2, 1996.
(Source: Statistics Netherlands).

The decrease is partly caused by a drop in the birth rate (see Chapter 2: Birth). Another reason is increasing life expectancy, resulting in a higher percentage of elderly people (in 1970, 10% of the population as a whole was aged over 65 and the figure in 1996 was 13%).

In 1995, there were 190,500 live-births and 1,100 late foetal deaths. The birth rate was 12.3 per 1,000 inhabitants. In 1995, 1,050 boys were born per 1,000 girls.

Most children aged 19 and under live in two-parent families. In 1992, approximately half a million 0-19 year-olds (13%) were living in single-parent families. Most single-parent families consist of divorced women and their children.
Most children live in a single-family house with a garden. More than three quarters of the children have their own bedroom. Only 18% share a bedroom with a brother or sister.

Table 1: Number of young people (aged 0-19) in the Netherlands, 1950-1995. (Source: Statistics Netherlands).

Year	1950	1970	1990	1995
Inhabitants	10.0 million	13.0 million	15.0 million	15.5 million
Live births	229,700	238,900	198,00	190,500
1-4 years		961,400	744,900	791,500
5-9 years		1,210,100	887,400	954,500
10-14 years		1,148,500	900,400	903,700
15-19 years		1,108,600	1,097,300	922,800
Total 0-19	3.8 million	4.7 million	3.8 million	3.8 million
Proportion 0-19 (%)	37.6	36.0	25.3	24.5

Non-Dutch nationals and foreign-born inhabitants

In the past, Surinam and Indonesia were parts of the Kingdom of the Netherlands. At present, the overseas areas of the Netherlands are limited to the Antilles. In the fifties, many Indonesian families came to the Netherlands. The sixties saw the arrival of many Turkish and Moroccan men in the Netherlands, to be joined later by their wives and families. During the seventies, many inhabitants of Surinam and the Dutch Antilles came to reside in the Netherlands.

In 1996, 9.1% (1.4 million) of the population of the Netherlands was born abroad and an additional 7.9% (1.2 million) had at least one foreign-born parent. Most of these residents belong to an ethnic minority and they mainly live in the country's 4 major cities (Amsterdam, Rotterdam, Utrecht and The Hague). Most of the people in the Netherlands who were born abroad come from Surinam, Turkey and Morocco. Table 2 shows the number of 0 - 14 year-olds born abroad or with parents born abroad for these 3 groups.

Table 2: Number of 0-14 year-olds in 1995 born abroad or with parents born abroad. (Source: Statistics Netherlands).

	Born abroad	Parent(s) born abroad	Total	Proportion of all 0-14 year-olds in the Netherlands
Surinam	9,478	68,037	77,515	2.7%
Turkey	9,173	79,483	88,656	3.1%
Morocco	14,048	67,863	81,911	2.9%

Life expectancy

Life expectancy at birth is high in comparison to the other European countries and is still increasing (Table 3). In 1996, 13.3% of the population was aged over 65. In 2020, approximately 18% of the population is expected to be aged over 65.

Table 3: Life expectancy at birth (years) in European countries for boys and girls in 1989 and 1994. (Source: Demographic Yearbook, Eurostat).

	1989 Boys	1989 Girls	1994 Boys	1994 Girls
Netherlands	73.7	80.0	74.2	80.2
Spain	73.1	79.6	73.4	80.5
Greece	72.6	77.6	74.6	80.0
Italy	72.6	79.1	73.5	80.0
France	72.5	80.7	72.9	81.1
Belgium	72.4	79.0		
UK	72.4	78.1	73.5	79.1
Denmark	72.0	77.7	72.4	77.8
Germany	71.8	78.4	72.5	79.0
Ireland	71.0	76.7	72.3	77.9
Portugal	70.7	77.6	70.8	78.0
Luxembourg	70.6	77.9	70.6	77.9
Norway			74.2	80.3
Sweden			75.5	80.8
Finland			70.9	78.9
Switzerland			74.7	81.4

CHAPTER 2: CHILDREN'S HEALTH STATUS

Children in the Netherlands are generally in good health. Since the end of the nineteenth century, child mortality rates have dropped rapidly. Because of the absence of diseases in most children and because of the good nutritional status in the Netherlands, Dutch children are among the tallest in the world. The median height of 20 year-old girls in 1994 was 1.70 metres. The figure for 20 year-old boys was 1.83 metres. The mean height of recent generations has been increasing by 1-2 centimetres per decade. The mean age of menarche in Dutch girls was 13.3 years.

Child mortality rates

Perinatal, infant, toddler, schoolchildren and adolescent mortality has greatly decreased since the end of the nineteenth century (Figures 2 and 3). In European countries, the infant mortality rate ranges from 4 to 9 per 1,000 live-births. In 1994, the Netherlands was one of the nine countries with the lowest rates (6 per 1,000) in Europe.

Data about gestational age or birth weight for all births are not registered at birth by Statistics Netherlands. The percentage of preterm or low birth weight children, as well as mortality due to these factors, are only known from specially designed studies and surveys.

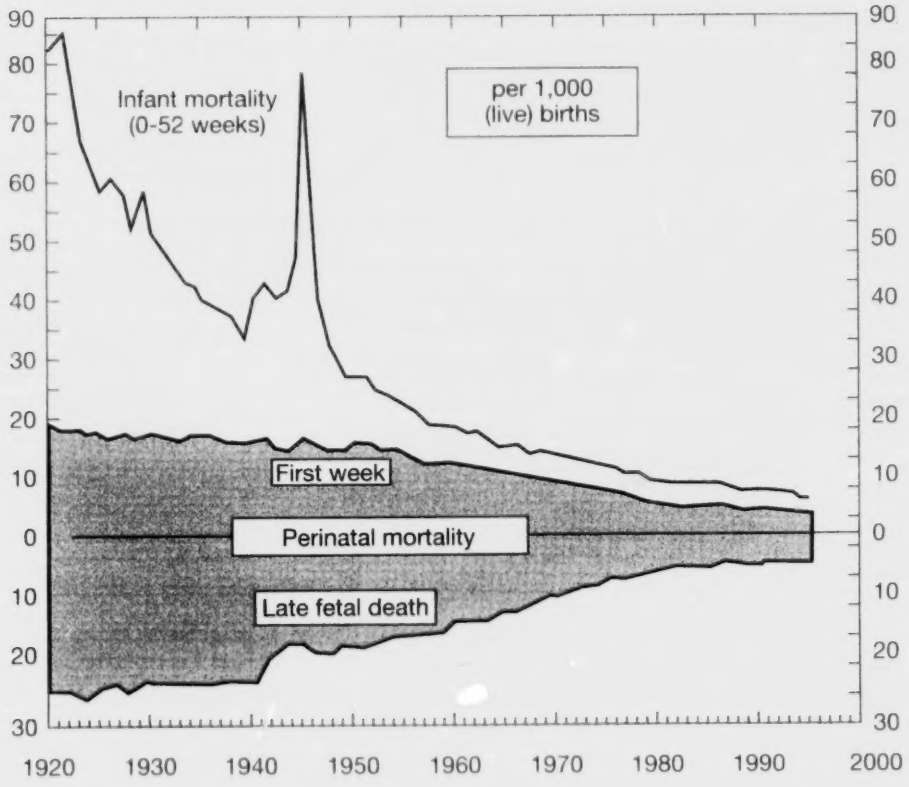

Figure 2: Perinatal mortality and infant mortality per 1,000 (live) births in the Netherlands, 1920-1995. (Source: Statistics Netherlands; graph TNO-PG).
In 1991 the definition of late foetal death changed from ≥ 28 weeks to ≥ 24 weeks of gestation.

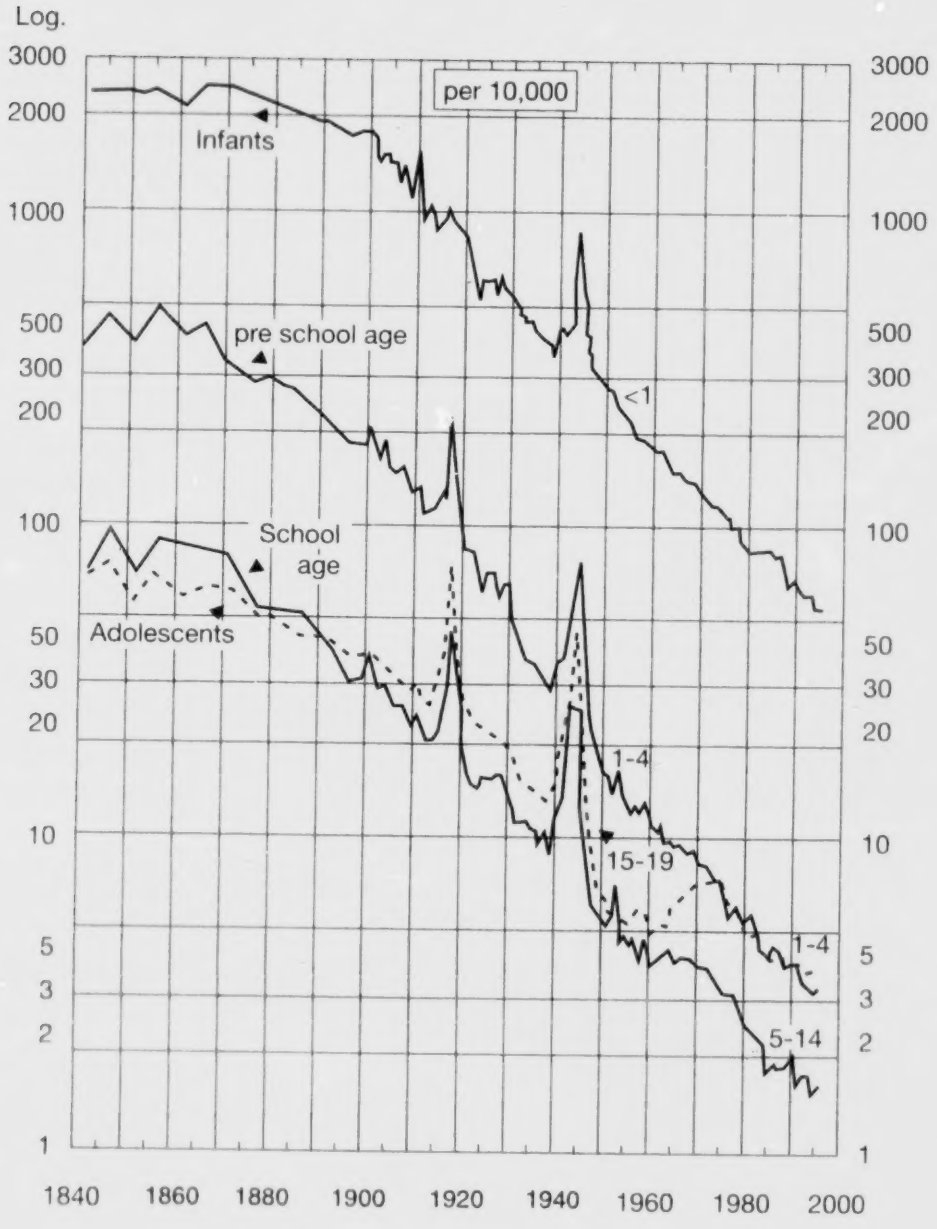

Figure 3: Child mortality according to age group in the Netherlands between 1840 and 1995. (Source: Statistics Netherlands; graph TNO-PG).

Mortality rates are higher for boys than for girls. The main cause of death in infants is congenital anomalies and in older children accidents (Figure 4, Table 4A and 4B).

The causes of mortality in children have changed over the last decades. Mortality caused by infectious diseases decreased, whereas mortality caused by traffic accidents increased both relatively and absolutely. Infant mortality decreased rapidly in the last decade, mainly owing to a decrease in the incidence of cot death. The prone sleeping position was identified as a risk factor for cot death, and, since 1987, preventive health care workers advise parents to use the supine sleeping position for infants. This national campaign has resulted in a drop in cot deaths from 190 infants in 1986 to 50 in 1995.

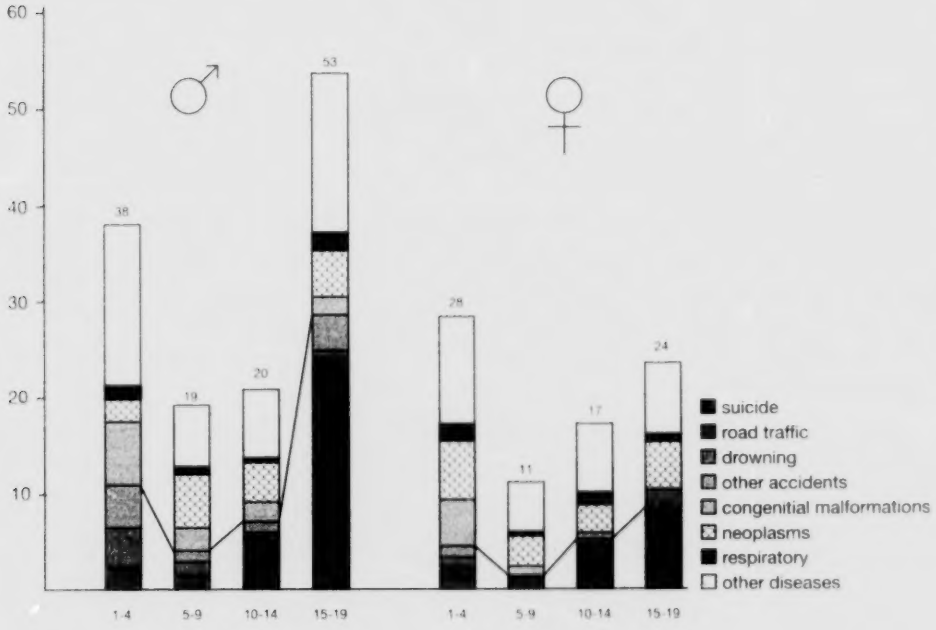

Figure 4: Causes of death in children by age and sex per 100,000 in 1995. (Source: Statistics Netherlands).

Table 4A: Causes of death in boys by age and sex per 100,000 in 1995. (Source: Statistics Netherlands).

	Boys age (years)				
	0	1-4	5-9	10-14	15-19
Respiratory diseases	8.2	1.0	0.8	0.2	1.5
Neoplasma	6.1	2.7	5.7	4.1	5.1
Congenital anomalies	195.7	6.7	2.1	2.2	2.8
Other diseases	409.0	16.8	6.1	5.9	15.7
Accidents, road traffic	1.0	2.7	1.6	4.5	19.7
Accidents, drowning	2.1	3.7	1.4	0.4	0.8
Suicide	0.0	0.0	0.0	1.1	4.4
Accidents, other	3.1	4.4	1.6	1.1	3.4
Total / 100,000	**625.3**	**38.0**	**19.3**	**19.5**	**53.4**
Absolute number	**610**	**154**	**94**	**90**	**252**

Abortion

In 1984, abortion was legalised in the Netherlands subject to certain conditions. Abortion is financed by the Exceptional Medical Expenses Act (AWBZ). In 1995, the number of abortions was 28,700. The Netherlands has the lowest abortion rate in the world. In 1994 the abortion rate was 6.0 per 1,000 women in the fertile age range (15-44 years). Most abortions are performed in independent clinics. The low abortion rate is a sign of good compliance with contraception and of the standard of health education in the Netherlands (See Chapter 3: Teenage sexuality).

Table 4B: Causes of death in girls by age and sex per 100,000 in 1995. (Source: Statistics Netherlands).

	Girls age (years)				
	0	1-4	5-9	10-14	15-19
Respiratory diseases	5.4	1.8	0.2	0.9	1.1
Neoplasms	5.4	5.7	3.0	2.9	4.7
Congenital anomalies	174.3	4.9	1.3	1.1	2.0
Other diseases	274.3	11.4	5.3	7.1	7.3
Accidents, road traffic	1.1	1.8	0.9	4.1	6.2
Accidents, drowning	0.0	1.3	0.0	0.0	0.0
Suicide	0.0	0.0	0.0	0.2	2.4
Accidents, other	3.2	1.3	0.4	0.5	0.0
Total / 100,000	463.7	28.2	11.1	16.8	23.7
Absolute number	431	109	52	74	107

Among the original Dutch population, the incidence of abortion is much lower, as about 40% of all abortions are performed on immigrant women. Abortion rates among these immigrant groups are 4 (Moroccan) to 10 (Caribbean) times higher than among women of Dutch origin.

Birth

At the end of the nineteenth century, the number of children born annually in the Netherlands was 150,000. The number of births remained stable in the early part of the twentieth century: approximately 180,000 children were born in 1930. During the

Second World War, the birth rate dropped, increasing again in the fifties and sixties after the war was over. By then, 240,000 children were being born annually in the Netherlands, the "baby boom". In the seventies, the number of births decreased again to 171,200 in 1983.Subsequently, there was another increase to 199,700 in 1991. The number seems to be stable at present. It is expected that the birth rate will decrease to 179,000 in 2010.

Of all Western countries, the Netherlands has the highest percentage of home births (31% in 1993). The high percentage of home births and the low perinatal mortality in the Netherlands is exceptional from an international point of view. The Dutch obstetrical system is based on the philosophy that reproduction, including delivery, is a physiological process. Childbirth is regarded as a natural process which should occur spontaneously, without anaesthesia and with a minimum of operative procedures. For this reason, home birth is preferred for normal delivery. The first priority in prenatal care is the selection of high-risk cases (See Chapter 4, Obstetrical care).

Almost all deliveries are attended by trained health personnel. There is a decreasing trend in home deliveries (Figure 5) caused by the fact that, in recent decades, there has been an increase in short-stay hospital deliveries with assistance by midwives rather than gynaecologists. After uncomplicated births, women return home the same day or after spending one night in hospital.
All women can obtain home maternity care for a period of 8 days after delivery (See Chapter 4: Maternity home help).

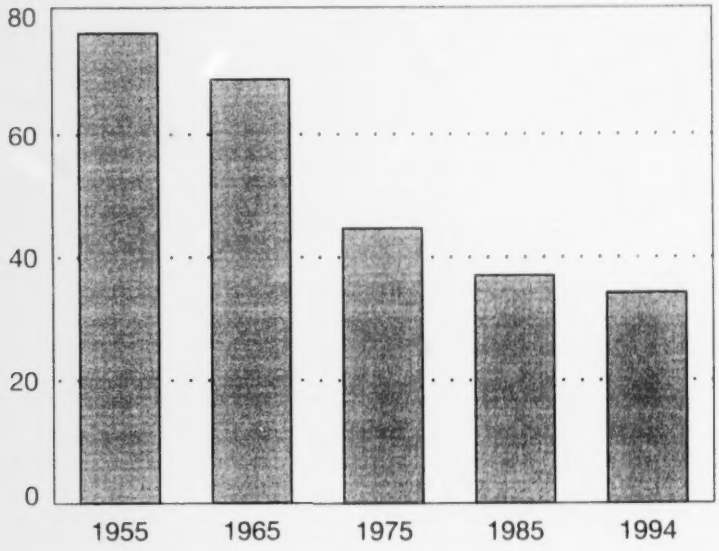

Figure 5: Home deliveries in the Netherlands, 1955-1994 (% of total deliveries). (Source: Statistics Netherlands).

In the last twenty years, the percentage of deliveries by Caesarean section has tripled to 9.3% of deliveries in 1995 (Figure 6). Compared to the USA (with a percentage of 21.2 in 1994), the percentage of Caesarean sections in the Netherlands is low.

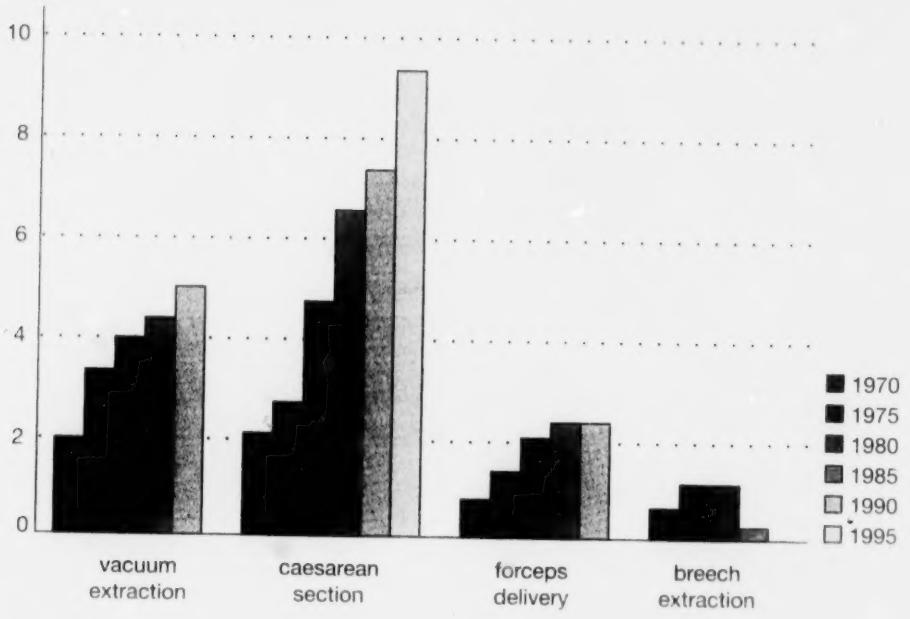

Figure 6: Artificial deliveries, 1970-1995 (%).
Figures for 1995 were only available for Caesarian section.
(Source: Statistics Netherlands).

Family planning

Of all European countries, women in the Netherlands are among the oldest when they give birth (Table 5). The average maternal age at the birth of the first child increased from 24.3 years in 1970 to 28.6 years in 1995. The total fertility rate per woman decreased from 2.6 in 1970 to 1.5 in 1995. The total fertility rate is the mean number of children per woman. This means that, on average, women in the Netherlands will have 1.5 children during their lives.

Table 5: Mean age at childbearing and total fertility rate in European countries, 1994. (Source: Eurostat).

Country	Mean age at childbearing	Total fertility rate
Ireland	30.3	1.9
Netherlands	29.9	1.6
Italy	29.6	1.2
Spain	29.5	1.2
Switzerland	29.4	1.5
Sweden	29.2	1.9
Denmark	29.1	1.8
Finland	29.1	1.9
France	28.8	1.7
Norway	28.7	1.9
Iceland	28.6	2.1
Belgium	28.2	1.6
Germany	28.2	1.3
United Kingdom	28.1	1.7
Portugal	27.9	1.4
Austria	27.5	1.4

The continuing trend towards postponing child-bearing is likely to lead to a decrease in fertility and to an increase of complications during pregnancy and at birth.

When time-to-pregnancy exceeds several months, general practitioners can refer patients to a gynaecologist who, after having performed diagnostic tests, may propose hormonal ovarian stimulation, intra-uterine insemination (IUI), in vitro fertilisation (IVF), tubal surgery, intracytoplasmic sperm injection (ICSI) or donor insemination.

Between 1975 and 1995, the prevalence of multiple births increased from about 1% to 1.7% of all births. During this period, the number of triplet births more than doubled.
This increase can partly be explained by the development of new infertility treatments. In the eighties, the number of pregnancies induced by artificial means such as hormonal ovarian stimulation, IUI or IVF increased in the Netherlands. In 1996, approximately 1% of live-births occurred after IVF and approximately 25% of IVF pregnancies were multiple pregnancies. Artificially-induced pregnancies are more likely to be multiple pregnancies and, therefore, to result in premature birth. In order to prevent triplet and higher-order IVF pregnancies, it has now been generally accepted that no more than 2 embryos should be transferred per treatment cycle unless they are of poor quality. However, the rate of triplet and higher-order pregnancies is still increasing e.g. due to the increase in ovarian stimulation without IVF.
Another reason for the increased prevalence of multiple births may be the increased age at birth: in pregnancies where the mother is older, there is a greater chance of a multiple birth.

Surinamese, Antillean, Turkish and Moroccan women differ from Dutch women not only in higher abortion rates, but also in family planning practice. In recent decades, however women born abroad have slowly begun to adapt to the Dutch way of family planning. There is an increase in the age at birth of the first child and a decrease in the number of children per woman. However, the risk of preterm birth in the black population is higher compared to other groups. In 1993, the fertility characteristics of women born abroad still differed from those of Dutch women (Table 6).

Table 6: Mean age of Dutch women and women born abroad at birth of first child and total fertility rate, 1993. (Source: Statistics Netherlands).

Country	Mean age at birth of first child	Total fertility rate (number of children)
Netherlands	28.6	1.5
Surinam	26.6	1.6
Netherlands Antilles and Aruba	26.5	1.7
Morocco	23.4	3.6
Turkey	22.0	2.5

Perinatal health problems

In the last 25 years, the perinatal mortality rate has more than halved from 18.6 in 1970 to 8.9 per 1,000 births in 1995 (Figure 2). Perinatal mortality is late foetal death (in 1991, the definition changed from ≥ 28 to ≥ 24 weeks of pregnancy) and first-week mortality combined. The change in certification rules from 28 to 24 weeks of pregnancy in 1991 resulted in an increase in late foetal deaths of about 20% in 1992.

Late foetal death rate in multiples is 2.5 times as high as in singletons. The perinatal and infant mortality rates for multiples are

4 times as high. Multiple pregnancies result more often in premature births compared to singleton pregnancies. Since the beginning of the century, the incidence of multiple births with more than 2 children has increased from 1.1 to 1.8 per 100 multiple births. These pregnancies almost all result in premature delivery.

Approximately 7% of all children are born before 37 weeks of gestation (preterm).
In 1995, approximately 1,652 very preterm (≤ 32 weeks) children were born, compared to 1,068 in 1983.

The incidence of very preterm (≤ 32 weeks) or very low birth weight (≤ 1,500 grams) infants increased from 8.4 in 1983 to 9.6 per 1,000 live-births in 1993 (in absolute numbers, 1,423 and 1,882 respectively).Three quarters of these children were born in a hospital with a Neonatal Intensive Care Unit because their mothers were transferred to these hospitals before delivery. 17.7% were delivered by Caesarean section.
In 1995, 2.2 % of all newborn babies (approximately 4,370 children) were admitted to a Neonatal Intensive Care Unit, compared to 1.6% (approximately 3,059 children) in 1989. This increase is due to an increase in the number of very preterm infants (≤ 32 weeks), of multiple births and of children requiring respiratory support.
The average stay in a Neonatal Intensive Care Unit was 12.2 days in 1995 (19.6 days if post-intensive care and high care are also taken into consideration).
The mean duration of hospital admissions has increased. This can be mostly attributed to the fact that the mortality rate of very preterm or very low birth weight infants is decreasing. The annual number of these children 'coming home alive' almost doubled in the last decade due to the decreasing mortality rate in these children. The percentage of surviving children facing physical, developmental or behavioural problems in later life

decreased. However, the decreasing mortality rate led to an increase in the total number of children with a chronic, physical disability or handicap (See Chapter 7: Preterm children).

Congenital anomalies

In 1974, a network of registers of congenital anomalies was established in European countries :the EUropean Registration Of Congenital Anomalies (EUROCAT). In the Netherlands, the registration of congenital anomalies started in 1981 in the Northern part of the country. During the period 1980-1992, the prevalence rates for congenital anomalies in European countries were registered in 28 EUROCAT registries (Table 7).

Table 7: European prevalence rates for neural tube defects, congenital heart disease, cleft palate and Down's syndrome per 10,000 live-births, over the period 1980-1992. (Source: Eurocat).

	European Prevalence Rates		Northern Netherlands
	Highest prevalence	Lowest prevalence	
Neural tube defect	18.8	1.2	8.0
Heart disease	79.2	17.5	59.1
Cleft palate	7.8	2.5	6.0
Down's syndrome	23.8	4.3	9.9

In the Netherlands, of an annual number of approximately 190,000 births, 1,340 are children with a congenital heart anomaly, 255 are children with a neural tube defect and 215 are children with Down's syndrome.

Accidents at home or around the home

Every year, 10-20% of 1-11 year-olds have accidents for which medical assistance is required. Boys are more prone to accidents than girls. Three out of four accidents occur at home. Half of the accidents for which medical assistance is asked are caused by falling.

In 1993, hospital admission for an accident around or at home was necessary in 13,005 children 14 or under. Admissions were caused by falling (46%), poisoning (15%), penetration of the body by a foreign object (3%), suffocation (2%), drowning (1%) and burns (1%).

75 children under the age of 15 died in 1993 as the result of an accident at home or around the home, a mortality rate of 2.3 per 100,000. The most common lethal accidents were drowning (47%), suffocation (25%), falling (8%), burns (7%) and poisoning (3%).

Table 8: Medical assistance and mortality rate per 100,000 in 0-12 year-olds caused by accidents at home or around the home in 1990. (Source: Consumer Safety Institute).

	Number per 100,000 children in the population
Visit to a general practitioner	18,000
Visit to an accident and emergency department	7,700
Hospital admission	430
Mortality	5

Traffic accidents

From 1975 onwards, the use of a helmet when riding a moped became obligatory. From that year onwards, adolescent mortality rates decreased rapidly (Figure 3).

In 1995, 69 children aged 1-14 died as a result of traffic accidents. In the Netherlands, most people own a bicycle. Separate cycle paths are common. Nevertheless, cyclists are frequently involved in traffic accidents. Children are particularly prone to cycling accidents, in part because their stage of physical development is inadequate to enable them to ride a bicycle safely.

2,839 children aged 0-14 were admitted to hospital in 1990 as the result of traffic accidents (46% of them were cycling at the time of the accident) and 82 children aged 1-14 died in traffic ac-

cidents (39% of them were cycling). In the Netherlands, the use of helmets when cycling is not mandatory. The voluntary use of helmets is being encouraged.

Chronic conditions and handicaps

Child mortality rates have decreased, not only in the first half of this century, but also in recent decades. It is expected that prevention programmes can reduce child mortality even further. However, the percentage of children with chronic diseases is increasing as a result of improved care for these children.

Not only better care and reduced mortality, but also the increasing number of multiple births and premature births are leading to an increase in the prevalence of chronic diseases and handicaps. This increase will produce, in turn, an increase in adults consulting the health care system and will, in future, lead to a higher prevalence of chronic disease at older ages.

Asthma

Twenty per cent of children aged 4-17 have a physical handicap. Of these, 90% have pulmonary problems. In the Netherlands, the number of children with asthma increased. At the age of 4-6, 11% of children have asthma. A higher percentage of children of Dutch parents have asthma than children of Surinamese, Moroccan or Turkish parents. Twenty per cent of regular non-attendance at schools is caused by asthmatic complaints.

Diabetes mellitus

One in 1,000 children have diabetes mellitus. The incidence of diabetes mellitus in children is increasing, as it is in Scandinavian countries. The increase is highest in young children and in girls. Between 1988 and 1994 in the Netherlands, the incidence of diabetes mellitus in 0-4 year old girls doubled, reaching 12.5 per 100,000 in 1994. The incidence of diabetes mellitus depends on both genetic and environmental factors. The sharp rise in incidence can only be explained by changes in the environment because the genetic profile of the population changes only slowly. This rise in diabetes mellitus, an illness with hardly any mortality in childhood in the Netherlands, will result in an increase in the prevalence of chronic diseases, especially at older ages.

Vision

4 % of children aged 0-9 and 12% of adolescents aged 10-19 wear spectacles.

Families with children with severe visual disabilities are offered advice and support at home by institutions for blind and visually-impaired persons. When the children start participating in regular infant groups, ambulatory support is available for the personnel of these groups. Most parents decide to send their children for regular education. Nowadays, children who attend schools for the visually disabled are less likely to live there. For the most part, school resources are geared towards the provision of outpatient assistance. This includes ancillary resources, as well as ambulatory care in the regular education setting (see Chapter 6, schools for special education).

Hearing

At the age of 9 months, a hearing test is offered by the pre-school health service (see Chapter 4, Preventive Child Health Care). Annually 7% of children fail the test. All of them are referred to general practitioners. The cause of hearing loss in most children is otitis media with effusion. One child in 1,000 has a congenital hearing loss. Since the hearing test was introduced in 1965, the age at which hearing loss is detected has been reduced from 6 years to 1.5 years.
If a child proves to be hard of hearing or deaf, the family is offered home help. For several years, parents and children receive intensive assistance in learning to communicate. The younger the child, the easier it is to overcome communication problems. Deaf children attend special schools, until they are able to visit, with help, a regular school.

Developmental problems

In the Netherlands, there are schools which provide special education for children with learning or behavioural problems and for children who are physically disabled. All independent rehabilitation facilities (i.e. facilities which are not part of a hospital) have initiated programmes for giving early guidance to families with children who have motor disabilities. Through these programmes, children can participate in infant groups which are linked to multidisciplinary treatment, involving physiotherapy, occupational therapy, speech therapy, doctors specialised in rehabilitation, educationalists and social workers.
Children in special education have a higher percentage of disabilities and handicaps than children attending ordinary primary schools (see Figure 7 and Chapter 6, Schools for special education).

Disability = any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or wthin the range considered normal for a human being.
Handicap = a disadvantage for a given individual resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual.

Source: WHO, 1980

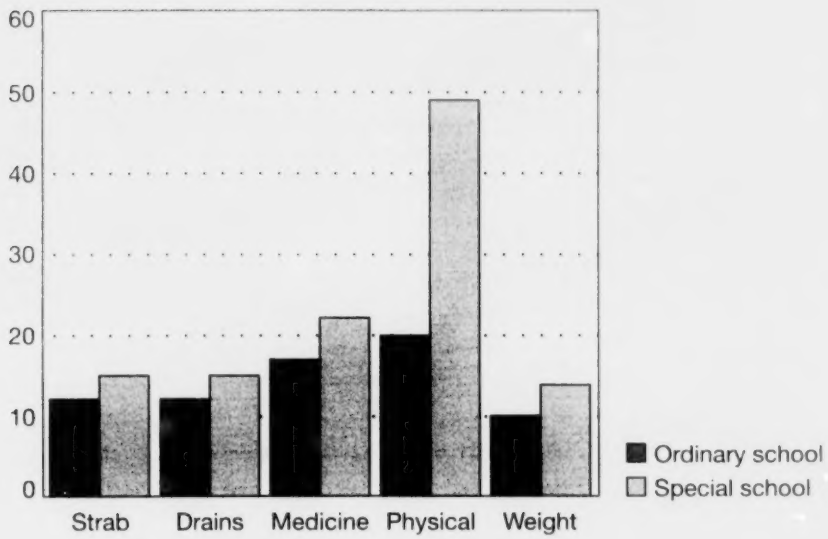

Figure 7: Percentage of children with strabismus (Strab), ear drains (Drains), use of medication (Medicine), a physical handicap (Physical) and excess weight related to height (Weight). (Source: TNO-PG).

Mental deficiency

At the end of 1991 1,876 children aged 0-14 and 5,798 aged 15-24 were living in institutional care facilities for the mentally handicapped.

Mental health

In 1983, 19% of children aged 8-11 had moderate, and 7% had serious behavioural and emotional problems as measured using the Child Behaviour Check List (CBCL). In 1993, 21% of 13-18 year-olds had psychiatric problems, mostly without problems in everyday life. In 1993, the CBCL, Youth Self-Report and Teacher's Report Form were used. In these studies, diagnoses were postulated using criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R). Girls had phobic complaints more often than boys, whereas boys had manic episodes, behavioural problems, attention deficit disorders and tic disorders more often than girls.

In the Netherlands, many organisations offer parents pedagogic support, the child preventive health care service being one example. One third of parents with children aged 0-4 have questions on upbringing. Nowadays parents ask questions about the upbringing of their children. It is probable that one of the causes of this uncertainty is the drop in the number of children in complete families and diminishing social networks around families.

In the nineties, a large number of organisations providing pedagogic support have been joining forces in Youth Care Bureaus (Bureaus Jeugdzorg). These bureaus provide a one window service for all questions. Children and their parents talk to an intake as-

sistant who decides which type of assistance is most suitable in this situation. The Youth Care Bureaus try to prevent parents from shopping around before finding the right help for them (see Chapter 5, Youth Welfare Work).

CHAPTER 3 : LIFESTYLE

Breastfeeding

In 1975, 45% of newborns were being breast-fed at the age of 8 days. In 1991, this figure was 60%.

In 1991, 26% of children aged 3 months were exclusively breast-fed. Of all European countries, the Netherlands has the lowest percentage of women breast-feeding their children at the age of 3 months, although breast-feeding is being encouraged by the pre-school health care service. This percentage has been declining since the seventies, reaching a low of 11% in 1975. An increase was seen in the eighties, reaching approximately 31% in 1985 (Figure 8). Women with a higher level of education, as well as Turkish women, are more likely to breastfeed.

There are as yet no data from 1992 onwards available for exclusive breastfeeding at 3 months.
Since 1919, employed women are entitled by law to spend up to a quarter of their working hours breastfeeding their baby. In spite of this law, most women stop breastfeeding when they return to work.

Breast milk from Dutch mothers contains a relatively high concentration of dioxins and PCBs. Nonetheless the beneficial effects of breast-feeding have been shown to be greater than the negative effects. Dutch breast-fed children show better neurological development at the age of 18 months than Dutch bottle-fed children. Furthermore, breast-fed children have a lower prevalence of milk allergy and infections.

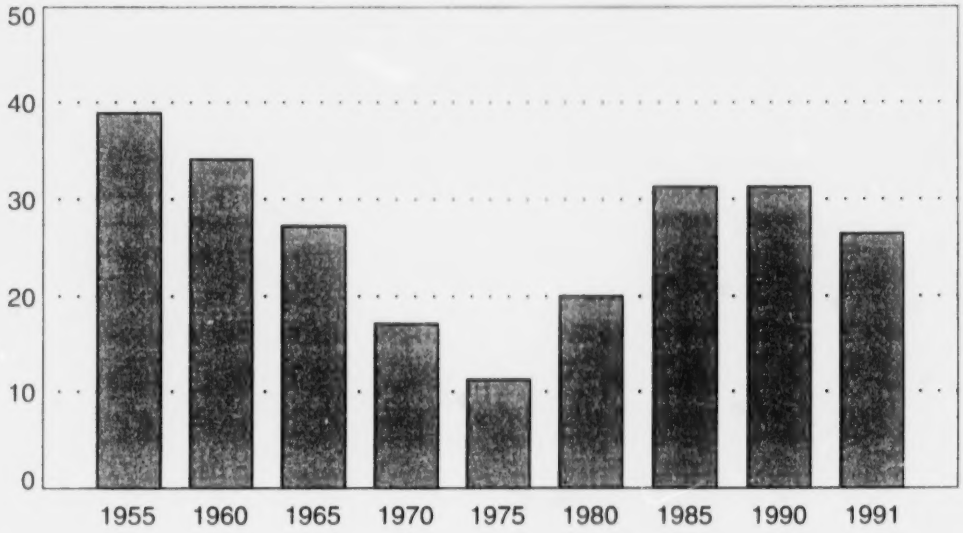

Figure 8: Exclusive breastfeeding at three months, 1955-1991 (%). (Source: de Jonge).

Dental health

In 1994/1995, dentists were consulted by 77% of 0-14 year-olds. Of 3-4 year-olds, 48% visited the dentist. The percentages for Surinamese, Moroccan and Turkish children were lower than the percentage for Dutch children. In the Netherlands in the seventies, the prevalence of caries in children aged 6 and 12 years was 99% for both ages. This percentage decreased in the eighties, and is stabilizing in the nineties. In 1993, the prevalence of caries in the Netherlands was 45% in 6 year-olds and 40% in 12 year-olds. In Turkish and Moroccan children, caries is seen in 75%.

The decrease in caries prevalence is mainly due to the use of fluoride. Most tooth paste in the Netherlands contains fluoride. Tooth paste for children under 4 contains less fluoride than toothpaste for older children and adults. The use of fluoride ta-

blets is advised: 1 tablet a day in 0-1 year olds, 2 tablets in children aged 2-4. In 1993, 42% of 5 year-olds used fluoride tablets.

Leisure time

Sports (including cycling) are one of the most popular ways of spending leisure time among children under the age of 15. In 1993, 56% of boys (aged 10-14) spent more than 8 hours a week on sports. The percentage for girls in the same age group was 37%.
Figure 9 shows the percentage of school children who watch TV more than 2 hours a day in 1992/1993.
In 1993, 52% of 4-11 year-olds subscribed to a youth magazine and 80% were members of a library.

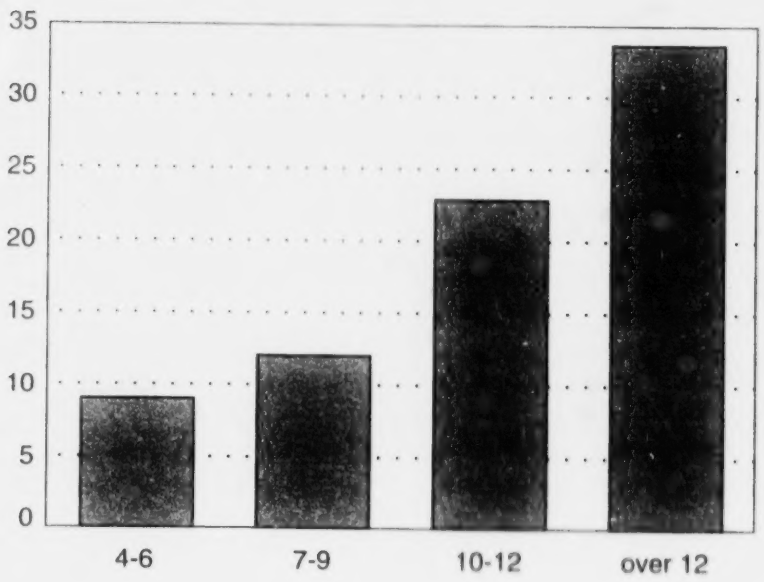

Figure 9: Watching TV for more than 2 hours a day (%) in school children, by age, 1992/1993. (Source: TNO-PG).

Cigarette smoking

Smoking in adults over 15 years decreased in men from 52% in 1980 to 39% in 1995 and in women from 34% to 31% respectively (Figure 10). However, smoking among adolescents increased slightly over this period.

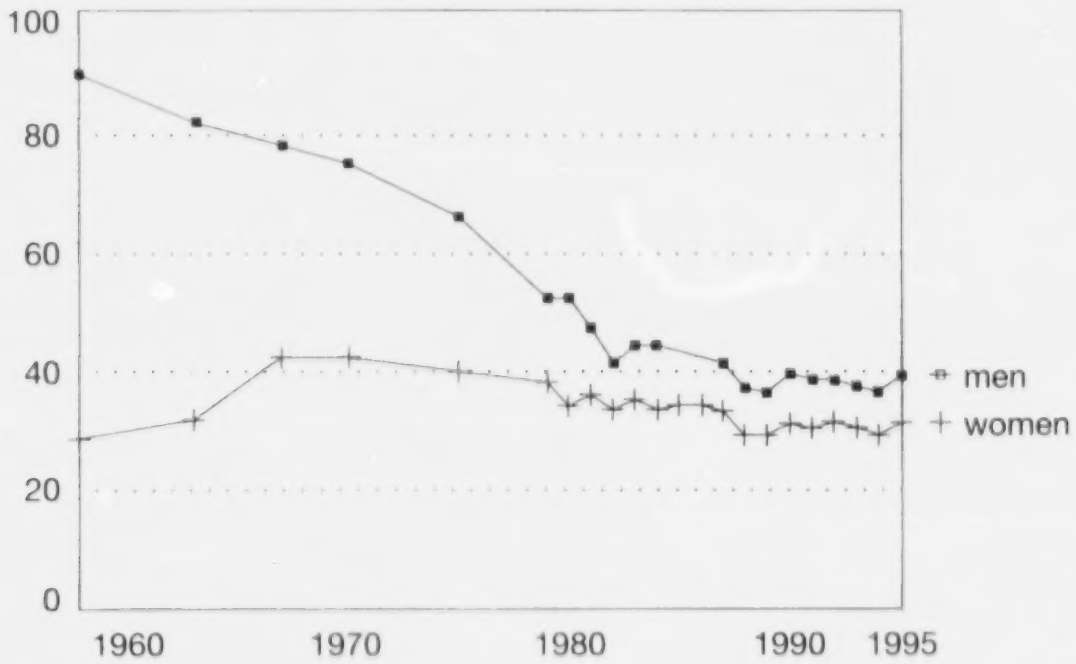

Figure 10: Smoking among adults over 15 years, 1958-1995 (%). (Source: Stivoro).

In 1995 in the Netherlands, smoking in the 4 weeks prior to the survey was reported in 4% of 10-12 year-olds, 24% of 13-14 year-olds and 46% of 15-19 year-olds. A higher percentage of boys smoke than girls. Cigarette smoking increases with increasing age

among adolescents (Figure 11) and the number of cigarettes smoked daily also increases.

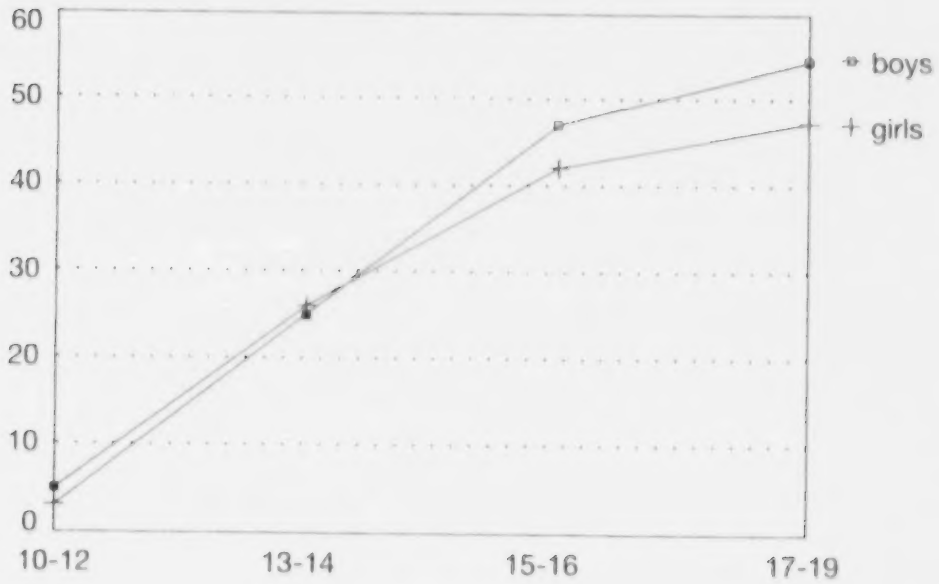

Figure 11: Reported smoking during the 4 weeks prior to the 1996 survey in adolescents aged 10-19 (%). (Source: Stivoro).

In the last decade, the percentage of adolescents smoking regularly increased, particularly among 13-15 year-olds. The increase in smoking among adolescents could, in the future, lead to an increase in smoking parents and thus to an increase in passive smoking in children. Passive smoking in infancy is associated with a variety of diseases, respiratory illness being an example. Long-term passive smoking can induce a predisposition to asthmatic complaints. Due to a reduction of other major risk factors for cot death, 60% of sudden infant deaths are now associated with passive smoking. Of newborn children, 42% were exposed to tobac-

co smoke in the living room, 8% were exposed in the car and 4% during feeding in 1996.

Alcohol

Regular alcohol drinking (defined as drinking beer, wine or other alcoholic drinks at intervals between daily and once a week) was reported in 1995 in 47% per cent of boys aged 11-19 and 36% of girls aged 11-19. The percentage of adolescents drinking regularly increased by 5% in the last 5 years, more in girls than in boys.

In adolescents there is an increasing morbidity of problems related to alcohol and drug use.

Drugs

In the Netherlands, there are approximately 27,000 heroin addicts. The mean age of the heroin addicts is increasing (fewer younger addicts) and is now over 30. Most of them have addiction histories of 10-15 years. In 1994, there were 37 deaths in the Netherlands as a result of an overdose of hard drugs.

To prevent the use of hard drugs, the Netherlands has, since the eighties, tolerated sales of marihuana (a soft drug) in 'coffee shops'. These coffee shops are bars where marihuana is sold at a separate counter from the counter where drinks are sold. The introduction of coffee shops was intended to separate the soft drugs world from the hard drugs world.

In 1995, the use of marihuana at any time was reported in 17% of adolescents aged 11-18 and half of those adolescents (9%) continued to use the drug. Three per cent of adolescents had used ec-

stasy (XTC) at some time and 2% of the adolescents was still using ecstasy on a regular basis (once a day to once a week).

Teenage sexuality

In the Netherlands in 1995, 40% of the 16-17 year-olds and 50% of the 18 year-olds (boys as well as girls) had engaged at some time in sexual intercourse. The percentage of girls aged 16-19 using the pill increased from 26.7 in 1985 to 43.8 in 1995. During first sexual intercourse, 70% use a condom, 37% use the pill (with or without a condom), and 15% take no preventive measures. With increasing age, condom use diminishes in favour of oral contraception, thereby raising the risk of sexually-transmitted disease. There are national information campaigns relating to adolescents and sex. The pill is advised for contraception and condoms are recommended for the prevention of sexually-transmitted diseases.

In the Netherlands, sexually-transmitted diseases are annually diagnosed in approximately 10 persons per general practitioner (with a caseload of 2,000 people on average). Youngsters aged 19 or less constitute 8.5% of all patients with a sexually-transmitted disease, 25% are young adults aged 20-24.
In 1995, nine 15-19 year-olds and thirty-two 20-24 year olds with syphilis were reported to the Health Inspector. The figures for gonorrhoea were 71 and 281 respectively.

The number of teenage pregnancies in the Netherlands is very low (Table 9). In 1994, 1.6% of all births in the Netherlands occurred in mothers under 20 year of age, as compared to 12.9 % in the USA in 1991.

Table 9: Number of live-births and still-births in girls aged 20 or less, 1995. (Source: Statistics Netherlands).

Age	N	Total number live-births	Total number still-births
under 16		64	0
16	89,166	134	0
17	89,677	387	2
18	89,245	701	4
19	91,218	1,349	8

The abortion rate in adolescents is also very low. In 1995, 0.4% of all abortions performed in the Netherlands involved girls aged less than 15 and 12.4% involved adolescents aged between 15 and 19.

In 1992, 4.2 abortions were performed per 1,000 girls aged 15-19 and 43.3 abortion were performed per 100 pregnancies in girls aged 15-19. This abortion rate has been attributed mainly to the general openness regarding questions of sexuality and to the ample availability of, and easy accessibility to, contraceptive services in the Netherlands.

CHAPTER 4: HEALTH CARE SYSTEM

Access to health care

In the Netherlands, access to health care is universal. In 1995, 63% of all inhabitants in the Netherlands (9.7 million) had compulsory health insurance, 36% (5.5 million) had private health insurance and 1.4% (200,000) were not insured. Uninsured people also generally receive preventive health care, and usually general practitioner and specialist services as well.

Organisation

In 1995, the Netherlands had 7,000 general practitioners and 820 registered paediatricians. There are 115 general hospitals and 8 academic hospitals. Almost all inhabitants live within a short distance from a hospital.

Curative health care for children is provided at the request of children or parents by general practitioners (primary care) and by specialists (secondary care). Specialist services can only be obtained after referral by a general practitioner. Most hospitals and specialised health care facilities are owned and managed by independent non-commercial organisations. Most general practitioners (GPs) and dentists are in private practice. GPs usually have patients with private insurance and patients insured under the compulsory scheme. GPs are the gatekeepers for hospital and specialised health care. Preventive health care for children is provided unasked to all children living in the Netherlands. It is provided by maternity assistants (at home) and by nurses and

doctors of the preventive child health services and not by paediatricians. Preventive health care services are divided into preschool (Mother and Child Health Care (MCH)) and school health care.

Financing

The health care system in the Netherlands is mainly financed from 3 different sources: compulsory health insurance, private health insurance and the Exceptional Medical Expenses Act (AWBZ). Every Dutch citizen with an annual income of less than 60,000 guilders (approximately 30,000 US dollars) is automatically insured under the compulsory health insurance scheme for medical, pharmaceutical and dental assistance. Hospital admission is also covered with a maximum stay of one year. The required premiums and contributions are based on income. People with an income in excess of 60,000 guilders have to take out private health insurance.

The AWBZ covers every inhabitant of the Netherlands. The funding is financed by a compulsory premium, levied together with the income tax. Under the AWBZ all inhabitants are covered for long-term treatment and nursing in hospitals after one year, comprehensive care for the physically and mentally handicapped, nursing homes, etc. This Act also covers home nursing care and the preventive health care for children up to 4 years of age (MCH).

In 1994, of the annual health care budget, 32% was spent on hospital care, 9% on the handicapped, 7% on mental health care and 4% on general practice. Of the total annual health care budget, 5% is spent on preventive health care (all activities).

In 1995, 8.8% of Dutch GNP was spent on health care. About 10% is paid out-of-pocket by patients, another 10% is paid by government from funds raised through taxation, and 80% is paid from insurance premiums (65% from compulsory health insurance and 15% from private insurance).

Obstetrical care

Dutch prenatal health care (obstetrical care) is financed by compulsory and private health insurance. Prenatal care is provided by specialists or general practitioners (53%), by independent midwives (46%) or by both physicians and midwives (1%).
A clear division of tasks exists between primary and secondary obstetrical care providers, based on the distinction between normal and abnormal. The independent midwife and the general practitioner in primary care are responsible for the provision of care in a healthy pregnancy and concentrate on prevention and early detection of pathology. In principle, pregnancy, delivery and confinement are considered to be physiological events. If, however, risks are identified during pregnancy, delivery or confinement, the midwife or the general practitioner decides whether referral of the patient to secondary care is desirable or necessary.
Most women have a choice between home or hospital delivery, but women at risk require care from an obstetrician in fully-equipped hospital departments.

Prenatal care consists of a monthly physical check-up, including weight and blood pressure measurements and urine examination. Blood is screened for syphilis, hepatitis B and rhesus antibodies. Ultrasound examinations are carried out only on indication. Pregnant women over 35 years of age are offered prenatal chromosome analysis. There is currently discussion about 'triple test' screening for Down's Syndrome.

Maternity home help

Postnatal care is provided by maternity assistants in the home. Following a birth, 77% of families ask for maternity care during 8 days. This consists of care for the mother and child, support with breastfeeding and of advice for both parents in taking care of the newborn infant. In addition, the maternity assistant can take over the usual household tasks during the postnatal period and takes care of other children, if present.

Preventive child health care

The government takes considerable interest in preventive child health care. The preventive child health care service offer prevention programmes for children from birth up to the age of 18 years. In addition to the prevention of health problems, attention is also paid to pedagogic and psychosocial problems and to educational problems.

Preventive health care for children is divided in 3 parts: perinatal health care (maternity home help), pre-school health care and school health care. The organisations for preventive health care are separate from the curative health care services.

Preventive child health care (including vaccinations) is offered for 0-4 year olds by doctors and nurses in the home care (=thuiszorg) organisations. Until the early nineties, nurses in the home care organisations worked in both pre-school child health care and in home care for chronically-ill patients. In the early nineties, the home care organisations divided these two tasks. There are now specially-trained nurses working in preventive child health care and specially-trained nurses working in home care (nursing).

Preventive child health care for 4-18 year-olds is provided by the Municipal Health Services (school health care). Almost all school health services provide individual examinations by the school doctor or nurse. Specific action is taken in schools with respect to health, health risks and (preventive) health education. This 'school health policy' is a group approach.

In 1991, the Child Health Monitoring System (CHMS) was developed to establish an understanding of the health status of young people. The aim was to assist national and local governments with the formulation of health policy and to evaluate health care. The CHMS is an ongoing system, embedded in the system of preventive health assessments by doctors and nurses working in the youth health services. TNO Prevention and Health serves as the central institute for the coordination of data collection and for data analysis and publication. Approximately one third of all municipal or regional public health services across the Netherlands participate. Together, they assess annually approximately five thousand school children and seven thousand 0-4 year-olds. Some aspects of health status are assessed every year in each child. The assessment of other aspects varies from year to year in order to obtain more in-depth information.

There are approximately 2,400 physicians working (part-time) in pre-school health care. 1,500 of them are general practitioner as well. The remaining 900 are more or less specialised in child care. Approximately 800 physicians are employed in school health care. Most of them are registered preventive medicine doctors specialised in child care. When there is a sign of problems with physical health or development, the child health care physician can refer children to the general practitioner. In the pre-school period, 21.5% of children are referred to general practitioners at least once. Of school children, 15% receive treatment from general practitioners, specialists or physiotherapists. Another 5%

are referred to general practitioners by school doctors.
More schoolchildren are referred in large cities than in rural areas.

Screenings, preventive health examinations, vaccinations and health education and promotion (Table 10) are all offered by the child preventive health care service. (Home care organisations and municipal Health Services).

Observations by workers in the pre-school health care system are recorded in a file. When a child reaches the age of four, the parents are asked for written permission to send the file to the school health care authorities. Until 1997, the school health care service kept the pre-school health care record separate. In 1997, integrated records were introduced which combine the findings of the pre-school and the school health care service.

Pre-school health care

Pre-school health care is provided by the Mother and Child Health Care, a division of the home care organisations, (formerly the 'Kruisverenigingen'). These organisations are private non-commercial foundations. In the pre-school period, 97% of infants and 80% of four year-olds visit a child health clinic regularly where they are seen by both nurses and doctors.
Most MCH organisations also provide pedagogic support, dietary advice and physical training for pregnant women.

The pre-school health care system provides screening for all 0-4 year olds in the Netherlands for phenylketonuria, congenital hypothyroidism, undescended testes, hip dysplasia, strabismus and hearing disorders. At the child health clinic, the parents are advised about nutrition (including vitamins A, D, K and fluoride),

Table 10: Preventive health care items, the type of activity and the age of first assessment. (Source: TNO-PG).

Health problem	Activity	Age of first attention
Hepatitis B	blood test	pregnancy
Syphilis	blood test	pregnancy
Rh antagonism	blood test	pregnancy
Neural Tube defects	information	pregnancy
Cot death	information	pregnancy
(passive) Smoking	information	pregnancy
Healthy nutrition (breast feeding)	information	pregnancy
Growth	measurement	birth
Haemorrhagic disease of the newborn	vit. K. suppl.	birth
Non Descended Testes	examination	birth
Congenital dysplasia of the hip	examination	birth
PKU/CHT screening	blood test	5-7 days
Rickets	vit. D. suppl.	1 week
Accidents	information	1 week

Health problem	Activity	Age of first attention
Psychomotor development	examination	4 weeks
Visual disorders	examination	4 weeks
DTP-Polio, Haemophilus influenzae type b	vaccination	3 months
Caries	dental care and fluoride suppl.	3 months
Hearing disorders	Distraction (Ewing, CAPAS) test	9 months
MMR	vaccination	14 months
Smoking, alcohol, drugs	information	10-12 years
Sexuality	information	10-12 years

lifestyle including best sleeping position for the baby, and safety in and around the home. Parents are provided with answers to their questions. Growth, psychomotor development and the development of speech and communication is observed using a growth chart and a checklist, the Van Wiechen test.

The nurse from Mother and Child Health Care visits the home on day 5-7 for PKU/CHT screening and returns a few days later, after the maternity assistant has left the family. All parents are

given a 'Growth Book'. This book (which is available in Dutch, English, Arabic, Turkish, Vietnamese and Chinese) contains information about the normal development of children, caring for a young child, healthy nutrition, dental care and vaccinations. The nurse makes an appointment for the parents and the child at the child health clinic. During the pre-school period, parents and children may attend the child health clinic about 10-14 times. On half of these occasions, they see a nurse and on the other occasions they see a doctor. The vaccination programme is started at the child health clinic at the age of 3 months.

School health care

Preventive child health care for schoolchildren is provided by the Municipal Health Services for children between the ages of 4 and 18.

- Almost all school health services have 3 individual examinations by the school doctor or nurse for all children between the ages of 4 and 14. The children are tested for hearing and vision and they also receive a general physical examination.

- Specific action is taken at the schools in relation to health, health risks and (preventive) health education. This 'school health policy' is a group approach for all children. Health education is provided in special projects which include lessons about lifestyle. Attention is payed to the hazards of smoking, drinking alcohol and unsafe sex.

School health policy

The school health care system is concentrating increasingly on children at risk.

- These children are approached individually or in groups. Children at risk can be identified by questionnaires on emotional well-being.
- Children at risk are also approached as a group. Group approaches occur in schools for special education because children attending schools for special education have more health problems compared to children at ordinary schools.

90-95% of schoolchildren are seen individually. All the children present at school will attend the lessons on health education.

Vaccination

In 1953, the Netherlands started a National Immunisation Programme (Figure 12). The vaccinations in children under 4 are given at the child health clinics by doctors and nurses. The vaccination at the age of 9 is given by doctors and nurses of the Municipal Health Services. All vaccinations included in the national programme are free of charge.

DTP-P	= Diphteria, Tetanus, Perussis, Poliomyelitis
Hib	= Haemophilus influenzae type B
MMR	= Mumps, Measles, Rubella
DT-P	= Diphtheria, Tetanus, Poliomyelitis
M	= Measles
R	= Rubella

The costs of vaccine production and distribution, as well as of the administration and the time that preventive health workers spend on vaccination, are financed by the Exceptional Medical Expenses Act (AWBZ). The quality of all vaccines used in the Netherlands is approved by the National Inspectorate of Health Care. All children may be vaccinated free of charge at the age of 3, 4, 5 and 11 months (DTP-Polio and Hib), 14 months (MMR), 4 years (DT-Polio) and 9 years (DT-Polio and MMR). The DT-Polio and MMR vaccines are given simultaneously. The Netherlands uses the Salk polio vaccine (IPV). It is given intramuscularly as a cocktail together with vaccines for diphtheria, tetanus and pertussis (DTP-Polio). The Netherlands still uses a whole-cell pertussis vaccine. In 1987, the combined live vaccines for measles, mumps and rubella were introduced. In 1994, Hib vaccination (Haemophilus influenzae type b) was added to the programme. It is given simultaneously with the DTP-Polio vaccine.

Figure 12: Vaccination schedule in the Netherlands, 1997.

Age / Vacc.	Birth	Age: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 Months	4 9 Years
DTP-Polio (IPV)		I II III IV	
DT-Polio (IPV)			V VI
Haemophilus Infl. type b.		1 2 3 4	
MMR		1	2

Special groups

Hepatitis B[1)]	Pass imm	Active immunization 1 2 3 4
BCG[2)]		1

1) for children of HBsAg positive mothers

2) for children of parents from countries with a high tuberculosis prevalence

There is no legal obligation or requirement to be immunised. Nevertheless, since the start of the immunisation programme in the Netherlands, coverage has been high (Table 11) and the incidence of preventable diseases are low. Despite this high coverage, low immunisation rates are still found among certain groups, including members of some Protestant denominations that reject immunisation on religious grounds. A small group of anthroposophically-oriented people refuse immunisation, especially with the MMR vaccine. These children have a relative high risk of contracting these diseases since they live together. The poliomyelitis outbreak of 72 patients in 1992/1993 was restricted to the groups that reject immunisation on religious grounds, living together in specific regions (pockets).

Apart from these groups, children with foreign-born parents form a fragmented group which also has a low immunisation rate because of missed opportunities. These children benefit from herd immunity as they live scattered among the population as a whole.

Table 11: Immunisation coverage on 01-01-1996 in the cohorts 1970 to 1993. (Source: Inspection of Health Care).

Cohort	DTP-Pol 12 m	M 14m	MMR 14m	DT-Pol 4 y	DT-Pol 9 y	MMR 9 y	Rub 11 y
1970	91				92		90
1975	93	82		93	93		93
1980	95	92		92	94	93	
1985	94	80	13	93	94	94	
1990	95		95	93			
1993	93		94				

Administration of the vaccinations.

The doctors of the Provincial Vaccination Authority (PVA) are responsible for the implementation of the Immunisation Programme. The PVA maintains a computerised database of immunisation records for each child in the province. Every child is included in this system from birth until the age of 13. Each day, the PVA receives data from municipal records relating to births, changes of address and deaths. During the child's second month, the PVA sends the parents a set of records together with an explanation of the vaccinations. This text is written in Dutch, English, Arabic and Turkish. The doctor or nurse who gives the vaccination sends the cards back to the PVA. If the child does not receive the appropriate vaccinations, the PVA sends the parents a reminder. This registration system makes it possible to check which vaccinations a child has had, even when the file is missing.

Additional vaccinations

In addition to the recommended schedule for DTP-Polio, Hib and MMR vaccination, the Health Council of the Netherlands recommends additional vaccinations for certain high-risk groups.

1. Children aged 6-14 months who are travelling to a country with a high prevalence of measles can receive an early MMR vaccination at the child health clinic. This vaccination is free of charge, like the other vaccinations in the National Immunisation Programme. At the age of 14 months (but at least 4 weeks after the MMR vaccination), the child receives another MMR vaccination.
2. Children of foreign-born parents who are going to countries with a high prevalence of tuberculosis can receive the Bacillus Calmette-Guérin vaccine (BCG), preferably at the age of 6

months, but it can be given from birth, if necessary. The Regional Public Health Authorities provide this vaccination free of charge.

3. In 1989, a new programme was initiated for the children of women who screen positively for hepatitis B in pregnancy (0.5% of pregnant women). The children receive immunoglobulin immediately after delivery and a hepatitis B vaccination at the ages of 3, 4, 5, and 11 months. Vaccination takes place at the child health clinic, using the same schedule as DTP-Polio-Hib vaccination.

General practitioner consultation rates

Almost all children (95%) have been seen by a general practitioner before the age of 2. In the Netherlands in 1994/1995, 69.4% of 0-14 year-olds had been seen by a general practitioner, the most frequent causes being skin diseases, leg or foot complaints and common cold. Sixteen per cent of the children reported prescribed medicine use in the last 2 weeks and 21.9% used non-prescribed medicines in the 2 weeks prior to the interview.

Most children aged between 0-4 who had been seen by a general practitioner had an upper airway infection or an ear infection. Children aged 5-14 were referred by the general practitioner to specialists because of visual defects, ear infections, genital or menstruation problems or postural anomalies. In adolescents (aged 15-24) there has been an increase in recent decades in the prevalence of anorexia nervosa, bulimia, sexually-transmitted diseases, violent injuries and in problems related to alcohol and drugs use.

Specialist service use

In 1989, 30% of children aged 0-2 had been examined by paediatricians and another 20% by other specialists.

In 1994/1995, 33% of 0-14 year-olds consulted a specialist, 4% were treated by a physiotherapist and 4% consulted practitioners of alternative medicine. Specialists were most often consulted for ear complaints, eye complaints, skin diseases and leg or foot complaints.

Hospital admissions

In the last decade, average hospital admissions decreased from 21 days in 1974 to 8 days in 1996 (this figure relates to all hospital admissions - including adult admissions - in the Netherlands). The number of children being hospitalised is also decreasing (Table 12). There is a clear shift from inpatient treatment to day care or outpatient treatment. There has been an increase in day care admissions. In 1995, four per cent of the children aged 19 and under had been admitted to hospital. Most child admissions to hospital are due to pulmonary infections and (traffic) accidents.

Table 12: Hospital admissions of children aged 1-14 and mean stay (days), 1983-1995. (Source: SIG Health Care Information).

	Number 1-14 year olds	Total number of admissions in 1-14 years olds	Number of 1-14 year olds admitted by a paediatrician	Mean stay (days) of 1-14 years old admitted by a paediatrician
1983	2,797,000	173,600	42,900	11.7
1986	2,582,000	126,900	38,500	10.2
1990	2,541,000	98,100	37,400	8.6
1995	2,650.000	88,600		

In some hospitals, one of the parents is allowed to sleep next to the young child during hospitalisation. In most hospitals, parents can visit their children without restriction. Older children can receive help with their school work.

CHAPTER 5: SOCIAL WELFARE

Pregnancy leave

Employed pregnant women are entitled to pregnancy leave of 16 weeks on full pay. Women are allowed to stop working 4-6 weeks before the delivery is expected. This means that when the baby is 10-12 weeks old, most women in the Netherlands have to go back to work.

Breastfeeding at work

In the Netherlands, women are legally allowed to spend 2 hours of each 8-hour working day breastfeeding. The time spent on breastfeeding is paid for by the employer. However, in practice, the implementation of this act is poor.

Parental leave

The government encourages parents to combine paid work with taking care of a family. In 1991, the Parental Leave Act was accepted. This gives parents (both women and men) the right to take leave in order to care for their children.

In most European countries, parents can take parental leave. In some countries, the leave is unpaid (Greece, Spain, Portugal and the Netherlands) but parents in Austria, Denmark, Finland, France, Germany, Italy and Sweden get a share of their salary during their parental leave.

In most European countries, parental leave can be taken only

until the child is 4 years of age. In Sweden, parents can take parental leave before their child reaches the age of 8 and the limit is 9 years of age in Denmark.

Until 1997, the minimum working time during parental leave was 20 hours a week. Parental leave had to be taken before the child reached the age of 4.
In 1997, the arrangements for parental leave in the Netherlands were extended to allow parents to work for 50% of the working week during 6 months or not to work at all during 3 months. Parents can take parental leave until the child is 8 years of age.

Child benefit

All parents with children aged 18 or less are entitled to child benefit for the costs of the children. This benefit is about 1,000 Dutch guilders annually for each child.

Day care for children

In the fifties, almost all mothers stayed at home to raise their children. In recent decades, emancipation has led to a higher percentage of girls in higher education. In 1995, half of the students in higher professional education (48%) were female, as were a third of the students at Dutch universities (33%). After graduating, most women work for a few years before having children. It has become common for parents to combine children with work.

In 1992, 53% of women with one child under the age of 4 worked. Fewer women with more children (the youngest aged under four) have a job (31%). Most mothers in employment work part-

time (67%).

During working hours, children can stay in day nurseries or host families (professional day care for children). There is a scarcity of professional day care facilities because there are only a few employers with access to day nurseries. A lot of working parents therefore bring their children to their family, neighbours or to grandparents. There are also parents who hire a home help or an au pair.

In 1994, professional day care (day nurseries and host families) had capacity for 109,000 children. Of the children in professional day care, 70% are in a privately-run day nursery, and 5% were in commercial day nurseries. 11% were with host families and 14% of the children went to day centres after school hours.

Now that the number of day nurseries for children under four is increasing, day care for school children (after school hours) is particularly in demand. The government is paying attention to this demand from working parents.

Youth welfare work

The policy of the government is to promote and create opportunities for children by stimulating social commitment to children, creating a strong social position for children and creating possibilities for social participation. In the last decade, the local authorities in the Netherlands have claimed a more active role in shaping the welfare of young people. They want to create more coherence in the field and they are therefore encouraging institutions for youth welfare work to contribute to the solution of complex problems involving young people. Many institutions are approaching target groups on a project basis. This has led to

the formation of locally integrated networks, in which representatives of day care centres for children, social work, primary schools and the preventive child health care services participate. In 1994-1995, there were 178 local networks. The members of the networks meet about 8 times a year. During the meetings, local problems or problems relating to individual children are discussed. The most frequently-discussed topics in the local networks are problems with emotional development, signs of child abuse, pedagogic problems and signs of mental retardation.

Youth care

'Youth Care' (Jeugdzorg) in the Netherlands consists of three kinds of care:
Mental health care for children and adolescents (especially ambulatory care as provided by the Regional Institutes for Ambulatory Mental Health Care, the RIAGG), financed by the Ministry of Health
Youth Protection (Jeugdbescherming), financed by the Ministry of Justice, which deals with "forced aid" (by Child Welfare Council) and
Youth Welfare Work (Jeugdhulpverlening), also financed by the Ministry of Health, which supports children and adolescents with mainly social and adaptive problems.

Since many children and adolescents have problems in more than one of these areas, and schools and preventive child health care are often involved as well, the current efforts of professionals, care providers and authorities are aimed at establishing a system of integrated care in these respects.

CHAPTER 6: EDUCATION

Playgroups

From the seventies, playgroups (for children from 2 to 5 years-old) were set up. Songs are sung and the children draw and paint. There is 1 skilled 'teacher' for every 15 children plus a parent. There are playgroups where the teachers have meetings with representatives from the pre-school preventive health care services. When 'teachers' in playgroups are worried about the development of a child, they can consult the nurse or the physician of the child health clinic. There are a lot of playgroups involved in locally integrated networks (See Chapter 5: Youth welfare work). In playgroups, as in compulsory schools, there are classes. Most children attend the toddler group for 2 mornings or 2 afternoons a week.

In 1994, there were 4,000 playgroups. Admission is now open to children aged between 2 to 4. After the fourth birthday children go to a primary school, although education is only compulsory from 5 years onwards.

Playgroups are not compulsory. The number of children who attend a playgroup is still increasing: from 174,000 children in 1990 to 200,000 children in 1994.
Parents have to pay for the playgroups. The fee is dependent on their income.

Compulsory education

All children living in the Netherlands are allowed to start school from their fourth birthday onwards. At the age of five, education

becomes compulsory. For the first eight years of their education, children attend a primary school. At the age of twelve, they go on to a secondary school which they attend for between four and six years (Figure 13). After the age of sixteen it is compulsory for them to attend school for at least two days a week. At the end of the school year in which the adolescent has his seventeenth birthday, school is no longer compulsory. Education is important in the Netherlands since qualifications are required for almost every kind of work.

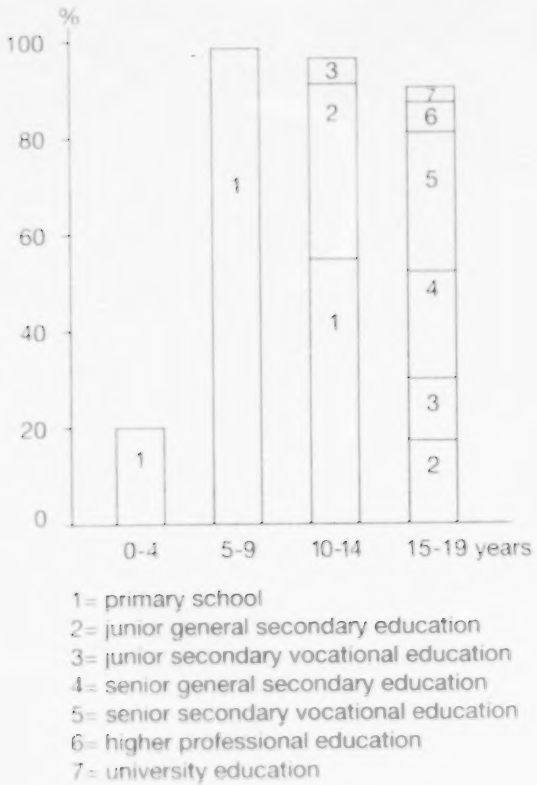

Figure 13: Participation in education in 1995/1996 (%). (Source: Statistics Netherlands).

The government pays the costs for almost all primary schools: the buildings, the teachers' salaries and the textbooks and exercise books. The law also lays down how many hours a week children have to attend school and which learning objectives have to be met. Many schools are run by the local authorities (public schools). There are also schools which have been set up by people with e.g. particular religious philosophies or by parents who think that children should be taught in a different way (privately-run schools). These schools receive as much money as the public schools, provided they fulfil the conditions set by the government.

Schools for special education

When a child has difficulties with school work or when a child has physical or developmental problems, the primary schools will give the child remedial teaching in reading or writing. The school can also ask for help from psychologists from a regional educational centre. When a child needs help which cannot be provided at an ordinary primary school, the child can attend a special school. The classes at special schools are smaller than in ordinary primary schools and special learning aids are used. There are special schools for children with a (partial) hearing loss, for children with visual impairments or physical disabilities and for children with speech disorders, but most children attend special schools for learning or behavioural difficulties.

The proportion of children at special schools has increased sharply in the last decade. In 1987, 2.6% of 4-12 year-olds was in special education. In 1994, the percentage was 4.2. Table 13 shows the percentage of children attending special schools, broken down according to age and gender. To stop the increase in children attending special schools, the government initiated a plan in

1996 with the aim of keeping the children who would have attended special schools in the past to remain at ordinary primary schools in the future. These children will receive extra help in primary schools which was not available in those schools prior to 1996. The extra help can be provided by teachers employed by the special schools.

Table 13: Percentage of children attending regular and special schools by age and gender, 1995/1996. (Source: Statistics Netherlands).

	Boys				Girls			
Age in years	Regular school		Special school		Regular school		Special school	
	Abs	%	Abs	%	Abs	%	Abs	%
4	100,661	99.2	777	0.8	96,008	99.6	379	0.4
5	99,683	98.3	1,762	1.7	95,355	99.2	793	0.8
6	94,828	96.8	3,143	3.2	92,120	98.6	1,333	1.4
7	91,953	94.8	5,002	5.2	90,103	97.6	2,228	2.4
8	90,906	92.9	6,895	7.1	89,053	96.6	3,157	3.4
9	88,020	91.3	8,413	8.7	88,637	95.7	3,989	4.3
10	84,429	90.0	9,364	10.0	85,164	95.1	4,413	4.9
11	82,162	89,8	9,382	10.2	81,721	94.7	4,532	5.3
12	79,847	89.7	9,188	10.3	81,486	94.9	4,363	5.1
13-15	261,385	93.7	17,479	6.3	257,557	96.9	8,123	3.1

CHAPTER 7: CHILDREN AT RISK

Use of the health care system

Children who consult general practitioners and specialists more frequently are:

- Children with physical or mental development disorders. They use the health care system 3 times more often than children with normal development.

- Children from lower social classes and children living in cities.

- Children who attend day nurseries have more health problems than other young children. They have twice as many respiratory infections and ear infections as children who do not attend day nurseries. A higher percentage also have ear drains. They consult general practitioners twice as often and use medication 3 times as often as other young children.

Health and socio-economic status

Research based on indicators such as perinatal and child mortality, morbidity data, well-being and height shows that children in the Netherlands are generally healthy.
However, socio-economic health differences do still exist. Examples are lower perinatal and child mortality in higher SES groups, higher rates of mortality, diseases and accidents in lower SES groups, particularly when housing and living conditions are

poor. Height and weight also vary with socio-economic status. The question which arises is whether these differences are caused only by socio-economic factors or by additional factors such as level of education, health-threatening life circumstances (e.g. living conditions, habits of nutrition, smoking, alcohol, drugs and behaviour involving a risk of accidents), and ethnic and or cultural differences. A lack of understanding of health and diseases and of knowledge of local care facilities may also affect health. Ethnic minorities are over-represented in the lower socio-economic groups.

Acting individually, health care workers can seldom solve the causes of socio-economic health differences. However, they can provide additional care.

The aim of government health policy is to reduce socio-economic health differences, thus improving equity in health. Evaluation studies of interventions designed to reduce socio-economic health differences are encouraged.

As long as socio-economic health differences exist, prevention is needed. Better education in general, health education directed at specific target groups (e.g. giving vitamin D to Mediterranean children to prevent rickets), the improvement of living conditions, prevention and care are tools for improving the health status of the following special risk groups.

Preterm children

Children born preterm have more health problems in the neonatal period than full-term children. In later years, very preterm or very low birth weight children also have a high risk of health and developmental problems. In the Netherlands in 1983, all 1,068 very preterm or very low birth weight children (0.6 % of the births in that year) were included in a nation-wide study and of them 714 were followed until the age of 10. At the age of 5,

23% of the survivors had a physical disability, 30% speech and language difficulties and 25% behavioural problems. At the age of 9, 32% were in a grade below the appropriate level for their age, 38% received special assistance at school and 19% of preterm children were attending a school for special education.

Ethnic minorities

Forty percent of ethnic minorities live in the 4 major cities. In these cities, half of the children have foreign-born parents (44% in Utrecht, 64% in Amsterdam).
Inhabitants of the Netherlands born in Turkey and Morocco have more health problems than Dutch-born inhabitants.

- Children from these ethnic groups use the health system more intensively than Dutch children. A greater percentage of children with foreign-born parents than Dutch children use medication, are referred to specialists and are admitted to hospital.
- Children whose parents are born in Morocco or Turkey have a higher risk of health problems like caries and accidents.
- The mortality rate in Turkish or Moroccan children is twice to three times as high as the mortality rate in Dutch infants. The main causes are cot death, infections, road accidents, drowning, congenital anomalies and congenital metabolic disorders.

In the Netherlands, the preventive health care system provides foreign-born parents with various courses of pedagogic and educational training with the aim of improving the health status of their children and of reducing the shortfall in these childrens' educational progress. The higher rate of health problems in these children and the preventable causes of mortality indicate that

prevention programmes can achieve a greater effect for the children of parents born abroad.

A special programme called "Opstapje" (meaning "preparation") is provided for children aged two or older from families from ethnic minorities in order to prepare them for the regular Dutch primary school. Once a week for two years, the child and its parent(s) are offered help and instructions with toys and books in a playful manner at home, by a mother who speaks their native language. The aim of this programme is to stimulate cognitive development in pre-school children.

Children of refugees

In recent years, the number of people asking for asylum in the Netherlands has increased. The number of families coming to the Netherlands has undergone a particularly sharp increase. In 1995, 29,258 people asked for asylum in the Netherlands. 18,501 of them were granted their request.
In 1994, 35% of asylum-seekers were aged 0-19. Children aged 0-4 are relatively over-represented. Asylum-seekers are housed in special centres until a decision is made about their request. The centres provide medical care. Children aged 0-19 are offered the same pre-school and school preventive health care, including vaccination, as is offered to all children living in the Netherlands. There are doctors in the centres who can be consulted.

Adopted children

Most adopted children are adopted abroad with many coming to the Netherlands in the seventies and eighties. The children were adopted from Korea, Colombia, Sri Lanka, Indonesia and India.

Upon arrival, 60% of the adopted children had a medical problem (Figure 14). In total there are about 22,000 adopted children living in the Netherlands. In the eighties, the number of foreign adoptions decreased. One of the reasons for the decrease was the increase in signs that adopted children developed emotional problems at a later age.

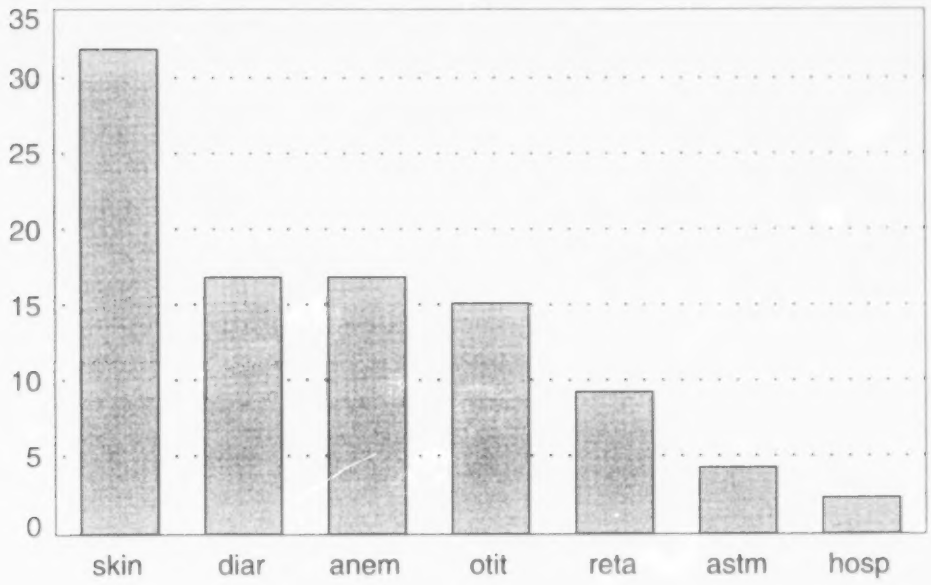

Figure 14: Medical problems in adopted children at arrival in the Netherlands: skin problems (skin), diarrhoea caused by parasites in the stools (diar), anaemia (anem), throat infections and otitis (otit), mental retardation (reta), medication for asthma or bronchitis (astm) and hospital admission (hosp) (percentage of total number of adopted children). (Source: Sorgedrager and Schulpen).

At the age of 12-15, the percentage of behavioural and emotional problems in adopted boys was twice as high (23%) as in boys born in the Netherlands (10%). During puberty, the problems worsen. By that time, 14.5% of adopted children have been examined by a psychiatrist.

Child abuse

In the last decade, a lot of attention has been paid to child abuse. A wide range of pedagogic and educational support is available for parents. There are consulting hours, advice is given to parents while visiting the child health clinic or the school doctor and there are pedagogic lectures for parents. In these lectures (mostly a series of 5 'lessons'), pedagogic and educational problems and their solutions are demonstrated on video. Parents are also given homework. The aim of the lectures is to teach parents how to understand children's tantrums and to teach them methods of responding to them. These lectures can prevent pedagogic problems leading to child abuse.

Families with cultural problems or who are socially isolated have an increased risk of developing pedagogic problems which can lead to psychological disorders in vulnerable children. The risk of child abuse is greater in children with a strong temper or a congenital anomaly. Parents with pedagogic problems are particularly liable to abuse their children. These at-risk parents do not attend pedagogic lectures. Fortunately, pedagogic problems and child abuse in these families can be noted and prevented by professionals in the pre-school and school health care systems because most of the children and parents are taken up into the preventive health care system.

In the Netherlands, anyone who has seen signs of child abuse

can phone the Advice- and Report Centre for Child Abuse. In the last 7 years, the number of reports of possible child abuse reported to the Centre doubled. In 1994, there was 1 report per 270 children. It is assumed that tens of children are still dying in the Netherlands annually as a consequence of child abuse.

School drop-outs

In 1992/1993, 4.7% of adolescents left school in the first 5 years of secondary school before completing their education (school drop-outs).

Boys drop out more often (5.3%) than girls (4.0%). Adolescents with foreign-born parents drop out more often than Dutch adolescents (Table 14).

Table 14: School drop-outs before completing 5 years of secondary education (%). (Source: ITS).

	School drop-out (%)
Morocco	16.1
Turkey	7.7
Surinam	6.6
Netherlands	4.2
Other country	5.9

In the eighties, the percentage of unemployed adolescents in the Netherlands increased. Most of the school drop-outs find jobs but these jobs are usually temporary. The government is worried about the prospects for these adolescents later in life. The government therefore encourages apprenticeships. An apprentice works in a company or institution for 2 or 3 years. The company provides on-the-job vocational training. At the end of the training, there is an examination. Apprentices receive the statutory minimum wage from the firm to which they are apprenticed. Apprenticeships exist for almost every sector of trade and industry.

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Acknowledgments

The production of this publication was supported by a grant from the Ministry of Health, Welfare and Sport (Department of Health Policy) and the Foundation Parent and Child Care.
In this publication we have used a range of sources, in particularly the monthly reports of Statistics Netherlands, information from SIG Health Care Information, the scenario reports of the National Institute of Public Health and Environmental Protection, and AJP Schrijvers' excellent book, Health and Health care in the Netherlands. In order to keep the text readable, we did not quote in the text every source we used since we would have had to do that after almost every sentence. We therefore preferred to include a general literature list.

We are indebted to Drs. A. Ambler-Huiskes, Drs. R.J.F. Burgmeijer, Prof. Dr. S.P. Verloove-Vanhorick, Drs. S. Buitendijk, Dr. A.L. den Ouden, Prof.Dr. T.W.J. Schulpen, Drs. M. Wagenaar, Drs. M.L. van Weert, Drs. T. Vogels, Dr. J. Merkx and Drs. H. Zoomers for their valuable comments on the manuscript. Drs. J. van Zwet checked the original data from the different sources. Dr. P. Thomas polished our imperfect English.

Our aim was to keep the text concise and readable.
However, we hope that this publication provides an adequate insight into child health in the Netherlands and that it will be used to compare preventive health care systems for children in order to improve the health of children all over the world.

The authors.

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